

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

January 4, 2008

TO: Internal File

THRU: Karl Houskeeper, Environmental Scientist III, Team Lead *KRH by an*

FROM: Priscilla Burton, CPSSc, Environmental Scientist III *PWB by an*

RE: Refuse Drainage to Pond 8, Consol Coal Company, Emery Deep, C/015/0015,
Task ID #2877

SUMMARY:

Violation (#10005) was issued on June 14, 2007. On September 10th, 2007, the Permittee submitted information to abate the violation. On October 31st, 2007, the Division's review of Task 2852 identified several deficiencies to be addressed. The Permittee submitted a response to the Task 2852 deficiencies on November 9th, 2007. I was not on the Task 2852 review team. This is a review of the soils related information submitted on November 9, 2007.

The Permittee should adequately address the deficiencies described below prior to approval of the abatement information. Violation #10005 should not be vacated at this time.

In addition, the Division is aware that MSHA approval for the coarse refuse and slurry pond illustrated on Plate II-2 was withdrawn on August 20, 2001. By a separate Division Order, the Division should require that all information pertaining to these structures be removed from the plan.

TECHNICAL MEMO

TECHNICAL ANALYSIS:

OPERATION PLAN

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Refuse Piles

The 4th East portal information indicates on Chapter III page 12a that acid-toxic forming material (or refuse) will be disposed of in one of three locations:

1. the permanent underground development waste site; or
2. the abandoned underground mine workings; or
3. the coarse refuse disposal area or
4. in place with four feet of cover.

Chap III.B.1 describes in-place reclamation of accumulations of coal fines within the disturbed area (see Chap III, p. 12a). This description is at odds with the requirements of R645-301-536 for placement of coalmine waste in a controlled manner and with design certification. All coal fines must be removed to the permanent waste disposal site.

Plate II-1, *Structures and Facilities Main Portal Area* illustrates the location of the existing temporary waste stockpile (within the northwest coal stockpile area identified as #31) and of the proposed permanent development waste burial site (identified as proposed #9). Plate II-1 also illustrates the locations of the proposed preparation plant facilities. As drawn, these facilities would be constructed on top of the 4th East portal road. Although this plate received a P.E. stamp, the Division cannot approve the facilities as drawn. Please modify the design accordingly.

Chapter IV.C4 Figure 1, *Existing Coal Mine Waste Pile Plan and Cross-Sections*, provides three cross-sections of the existing temporary waste pile. According to the application, the existing temporary waste pile (within the northwest coal stockpile area) will receive waste during the life of mine. Currently the northwest coal stockpile area holds 37,000 cu yds of waste material. The life of mine capacity for this pile was not disclosed, although an additional 600 cu yds are expected during operations (Chap 2 (p. 9).

During final reclamation, the northwest coal stockpile area will be cleared of waste. Upon final reclamation, the waste from the northwest coal stockpile area will be taken for final burial to the permanent development waste disposal site, which is located on a hilltop directly east of the existing stockpile location (proposed item #9 on Plate II-1). The proposed permanent disposal area is 2.1 acres and has been partially excavated for gravel (see description of Permanent Underground Development Waste Disposal Site, Ch II, p. 11). Promised geotechnical information for the site has not yet been received (see cover letter dated November 9, 2007).

The permanent waste disposal site has a capacity of 21,850 cu yds (Chap IV.C.1. p. 24). This is 15,800 yds less than the current volume of material stored at the northwest coal stockpile area. Design information provided in Chap IV.C.1 and Plate IV-4 must be updated to provide storage capacity for the existing temporary waste stockpile volume and some additional volume for clean up of the site.

Excess Spoil:

Main Facilities Area

The construction of the permanent development waste disposal site will create excess spoil (see Chap IV.C.1, p. 25 and Contemporaneous Reclamation, Chap III, p. 3). Existing Pond #8 is proposed location for the excess spoil, as shown as proposed #30 on Plate II-1. The pond covers 21.3 acres (App VI-6, Fig. 1). Approximately 13,000 cu yds of excess spoil will cover half the pond and extend the existing parking lot at the mine site. Further excess spoil is proposed as cover over the facilities area where greater than four feet of coal fines have accumulated (see Chap. III.B.1). Alternatively, the excess spoil may be used as fill in portal and mineyard reclamation (see Chap. III.C.1).

4th East Portal

An excavated material storage pile at the 4th East portal can hold 128,000 cubic yards of material (page 17a, Chapter II) and covers 4.0 acres (Chap VI.B.3). This material came from:

- the development of the airshaft (70 feet deep and 16' in diameter) in the southwest corner of the site (page 17c Chapter II);
- the ramp excavation down to the portal cuts and across the face of the three portals each 8 x 14 on 45 foot centers;
- the temporary diversion construction;
- construction of the surge stockpile and coal handling facility (cross section B-B' Plate IV-3);
- the sediment pond (IV-8).

TECHNICAL MEMO

The excavated material storage pile does not contain underground development waste as defined by R645-100. The Division imposed this requirement on the Permittee due to the fact that

1. There is a permitted disposal site for refuse within the permit area and
2. Topsoil being stored beneath the excavated material must be protected from contaminants.

Reclamation of the 4th East portal will require approximately 99,000 cubic yards as indicated on page IV-14 of the submittal. That leaves 33,000 cubic yards of excess spoil during reclamation to be graded over the surface.

Findings:

The information provided does not meet the minimum required for Operations Spoil and Waste Materials. The Permittee must submit the following, prior to approval, in accordance with:

R645-301-121.200, Please show on Plate II-1 the lower coal stockpile south of Quitchupah Creek as described in Ch II, p. 9. • As drawn, these facilities would be constructed on top of the 4th East portal road. Although this plate received a P.E. stamp, the Division cannot approve the facilities as drawn.

R645-301-536, Provide geotechnical information describing the existing waste stockpile.
• The summary of acid-forming material handling described in Chap III, p. 12a must be revised, since it refers to in-place reclamation of acid/toxic forming refuse. • The application must state in Chap III.B.1 (p. 8) that all coal fines will be removed to the permanent waste disposal site, rather than allowing the in-place reclamation of accumulations of over four feet of coal fines. • The design information provided in Chap IV.C.1 and Plate IV-4 must be updated to provide enough storage capacity for the existing temporary waste stockpile volume and projected additional operational and reclamation disposal requirements.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Acid- and Toxic-Forming Materials and Underground Development Waste

Northwest Coal Stockpile Temporary Waste storage

Chap IV.C.1 p. 21 describes the characteristics of the waste in temporary storage. Fifteen samples of this waste were analyzed in 1986, when the pile size was only 9,000 cu yds. (a rate of one sample/600 cu yds). The analyses indicate that four feet of cover will be required due to acid-forming potential and SAR. The only additional information on the potential chemical characteristics of the coal mine waste is found in Ch. V Sections V.A.4 and Section V.A.5 of the 1990 plan.

The Division is aware that few additions to the northwest coal stockpile have occurred recently. However, the Permittee must commit to sample any waste placed on the pile at a rate of one sample/600 cu yds. This information must included with the annual reports and included in Chap IV.C.1.

4th East Portal

Drill Hole FC 702 provides an analysis above and below the I & J coal seams in the 4th East Portal location (page IV-2 through IV-6). This core indicates that the highest Electrical Conductivity and Sodium Adsorption Ratios are in the top ten feet of this material. Selenium and Boron are not a problem in the depths to be excavated. A layer of coal is encountered at approximately 34 feet. The band is about 6 inches thick and is low in pH (5.2) and has elevated copper (4.0 ppm) and iron content (821 ppm). This coal layer must be hauled to the refuse disposal site (see deficiency R645-301-536).

Findings:

The information provided does not meet the minimum required for Operations Hydrologic Information Acid and Toxic Forming Material. Prior to approval, the Permittee must provide the following information, in accordance with:

R645-301-731.311, The Permittee must commit to sample any waste placed on the pile at a rate of one sample/600 cu yds. This information must included with the annual reports and included in Chap IV.C.1.

RECLAMATION PLAN

TECHNICAL MEMO

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

Chap IV.C.1 describes the geology of the proposed permanent waste disposal site. The location is on an alluvial terrace approximately 40 ft thick composed of poorly sorted sand and gravels. A strata of Bluegate Shale separates the abandoned mine workings in the Ferron Sandstone unit approximately 75 ft below the surface. The gravel pit cut slope was sampled in 1989 for soil analysis (Chap IV.C.1). The three soil sample analyses are found in App VII.2. Based on SAR values, soils represented by sample 1 will be isolated and used as subsoil. Unfortunately, sample depths were not provided with the analysis, so that we have no information on how to segregate sample 1 soils from the rest. The plan must contain a commitment that upon construction of the permanent refuse site, the Permittee must resample the soils in the vicinity as follows: Samples will be taken on a 100 ft grid. Samples will be taken at one ft intervals for the first five feet and, thereafter, every two feet to the depth of the proposed excavation.

Chap IV.C.1 (pp. 24 and 25) indicates that approximately 7,900 cu yds of subsoil and topsoil salvaged from the permanent waste disposal site excavation will be stored in two separate piles (proposed #X and #X locations shown on Plate II-1).

Findings:

The information provided does not meet the minimum required for Operations Spoil and Waste Materials. The Permittee must submit the following, prior to approval, in accordance with:

R645-301-240 and R645-301-121.200, The three soil sample analyses are found in App VII.2. Based on SAR values, soils represented by sample 1 will be isolated and used as subsoil. Unfortunately, sample depths were not provided with the analysis, so that we have no information on how to segregate sample 1 soils from the rest. The plan must contain a commitment that upon construction of the permanent refuse site, the Permittee will resample the soils in the vicinity as follows: Samples will be taken on a 100 ft grid. Samples will be taken at one ft intervals for the first five feet and, thereafter, every two feet to the depth of the proposed excavation. • Original design estimates for covering 21,800 cu yds of

TECHNICAL MEMO

waste must be modified to provide enough cover for 37,000+ cu yds of waste currently stockpiled in the northwest coal stockpile area.

RECOMMENDATIONS:

The Permittee should adequately address the deficiencies described above. Violation #10005 should not be vacated at this time.

In addition, the Division is aware that MSHA approval for the coarse refuse and slurry pond illustrated on Plate II-2 was withdrawn on August 20, 2001. By a separate Division Order, the Division should require that all information pertaining to these structures be removed from the plan.